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Contents for December, 1939

ARTICLES

Dr. Moulton's Advice to Industry ..... *News Item* 198
Labor Relations in War Countries ..... *Digest* 199
Company and Community Relations ..... *Charles S. Slocombe* 203
The Westinghouse Safety Inventory ..... *T. O. Armstrong and H. B. Duffus* 211
How to Prepare a Job Manual ..... *Ralph D. Williams* 219
Workers at Play ..... *National Recreation Association* 227

BOOKS

Psychology for Business and Industry ..... *Herbert Moore* 233
The Functions of the Executive ..... *Chester I. Barnard* 233

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Dr. Moulton's Advice to Industry

Speaking at a luncheon given to a group of leaders of industry, science and finance by Alfred P. Sloan, Jr., chairman of General Motors Corporation, recently, Dr. Harold G. Moulton of the Brookings Institution renewed his often-made plea for a policy of low prices and increased output. He summarized some of the findings of the study financed by the Falk Foundation, results of which were published in the volume *Industrial Price Policies and Economic Progress*.

MORE PROFITS WITHOUT PRICE INCREASES

In 1936, he said, a certain company increased the scale of its operations from 53 per cent in the first quarter to 69 per cent in the second quarter and effected "more than a three-fold increase in net earnings." This was done with a slight decline in prices. In a single industry ten companies which had operated in 1935 on a 47.9 per cent basis, earning $41,000,000, increased their scale of operation in 1936 to 67 per cent capacity and earned $128,000,000 with an average increase in prices of only one per cent.

The economic significance of this kind of experimentation is seldom realized. The disparity between productive capacity and effective consumer demand is widely recognized but it frequently leads to preoccupation with redistribution of income without regard to the necessity for increase in output.

Economists continually stress the fact that no permanent gains can come to any element of the population except as the total amount of production is increased. The point on which Dr. Moulton and his associates are trying to convince industrial leaders is that increasing efficiency through a closer approach to capacity production will result in a relative or even an absolute decrease in prices and thus automatically increase purchasing power.

ADVICE TO LABOR

Increases in wages alone obviously will not accomplish the purpose; first, because they are spotty, leaving large masses of wage earners unaffected and, secondly, because the wage earning class is only part of the population. The farmers and the white collar workers and large groups of the population ordinarily called "middle class," but latterly depressed to very low living level—all these have to be considered in any effective increase of purchasing power.

Labor policy, said Dr. Moulton, during this war emergency "should be focused upon the realization of gains through more and steadier employment instead of upon hourly wage increases. The advances in hourly wages during recent years have not been accompanied by corresponding increases in weekly wages. On the contrary, weekly and annual wages have, on the whole, declined. A far-sighted labor policy can also contribute much to the maintenance of financial stability."

(Courtesy Federal Council of Churches in Christ.)

Dislocation of the Labor Market is Aggravated. Skilled Labor Must Not be Wasted. Increased Unemployment in Unessential Industries Must be Dealt with. Wages, Hours and Over-time Provisions Must be Suspended and Technical Training Accelerated.

Labor Relations *in* War Countries

DIGEST OF AVAILABLE INFORMATION

IN FRANCE workers get two-thirds ordinary pay for over-time worked over forty-five hours per week. They get normal pay for the first forty hours, no pay for the next five hours, and two thirds pay for the rest of their working time. They may be required to work seventy-two hours.

In England an employer may not hire workers, in certain classifications, without the consent of the government.

In England, where allowances are given by the government to families and dependents of mobilized men, "unmarried wives" are recognized as dependents, provided the worker, who is now a soldier, lived with his lady for six months before he joined the army, and continues to send her at least $1.75 a week out of his pay.

Jobs for Hitler, Chamberlain and Daladier

THESE are but three of the curious solutions of labor problems, which Messrs Hitler, Chamberlain, Daladier, and company have had to work out.

Though America expects to keep out of this war, personnel men may be interested in what they may face if we do get in to it, and in what their fellow personnel men are up against in England, France, Germany, and other European countries.

French Workers Hit Hard

FRENCH workers seem to be hit harder than those of other countries by war regulations. They were at one time on a forty hour week. This was extended in April 1939 to forty-five hours, after which an overtime rate of 5% extra was payable.

Under present war regulations, in industrial and commercial undertakings the limit is raised to sixty hours per week generally. In continuous operations the limit is fifty-six hours, but this may be extended with permission of the government to seventy-two hours, in the case of work carried out in the interest of national defense or some public service.

In the matter of wages the French worker is also hard hit. He works the first forty hours at normal rate of pay. For the next five hours of work he gets nothing, his employer having to pay what would be his wages into the Treasury for the National Solidarity Fund. For any work over forty-five hours the worker gets two thirds his normal hourly rate, the other third also being deducted by the employer and paid into the National Solidarity Fund. This fund is used for the payment of allowances to the families of men in the army and navy.

In addition, all French workers must pay a national contribution or tax of 15% of their earnings. This also goes into the National Solidarity Fund.

Wages cannot be skied by workers, because a decree prohibits a change in wages determined by collective agreements, and contracts of employment.

German Workers Protected

GERMAN workers used to work a limit of forty-eight hours per week or ninety-six hours per fortnight, with a limit of ten hours per day. Overtime rates of time and a quarter were payable for extra hours of work during the day, work at night, and on Sundays and holidays.

Under war regulations overtime rates are abolished entirely. But the stringency of this regulation may be mitigated in the worker's favor by measures concerning the tax on wages, and concerning prices.

Workers' income tax has been raised substantially, and is payable by those earning more than $600 a year, or $60 a month, or 20¢ an hour.

The worker is protected against price increases, because prices in most cases must be brought down in proportion to savings effected by reduced wage costs. Wages and salaries have been stabilized, and prices must be adjusted accordingly.

The Labor Trustees in some districts have directed that instead of reducing prices, employers must pay the savings effected by the abolition of overtime into the Reichsbank, for the Government.

English Workers Still Talking

THINGS seem to have moved much more slowly in England, where after the last war the Government encouraged unionization. Now nothing can be done without the consent of the unions.

The important executive council of the Confederation of Shipbuilding and Engineering Trade Unions had, according to the latest information, only just discussed the possibility of revising hours and working conditions. This is in great

contrast to the controlling orders and decrees immediately issued in France and Germany.

A slight indication of how unions in England are going to take care of the workers, war or no war, may be seen in the fact that some of them have secured by collective bargaining agreements that when they have to drop their tools to duck into air raid shelters, they shall be paid for such time lost.

English Labor Supply Control

ENGLAND seems to have gone farthest in controlling the labor supply, in order to make the best use of men available for keeping industries going, and for the army and navy.

A schedule of reserved occupations has been issued by the Labor Department. This is to ensure that workers, required for the maintenance of production and essential services, are not accepted for service in the army and navy, or take jobs in which their skill and experience will not be used.

An age is printed against each occupation. In general men who follow any of these occupations, whether employees, employers, or who work for themselves, cannot be accepted for national defense, if they are above the age listed. If they are below the age listed they may be used for national defese, only if they are required in their trade capacity.

In regard to certain industries and occupations, the Labor Department may, after consulting with a committee of employers and unions concerned, draw up regulations, which must be laid before Parliament, controlling employment in two ways.

First, advertizing for help by the employer is prohibited. Second, an employer may not hire or rehire a worker, in the occupations concerned, without first getting the consent of the Government. In this way, it is expected that the government can keep track of the distribution of skilled workers, and make sure that the fullest use is made of the nation's man power.

There has also been drawn up a National Register of all persons, showing their name, sex, age, occupation, profession, trade or employment, residence and marital state. This is kept up to date.

French Also Control Hiring

FRANCE is divided into departments or administrative areas. In each of these there is a labor inspector, who is head of the labor mobilization service. This service is responsible for centralizing, throughout the area, all information concerning labor resources, and the demand for labor of any kind in public administration, and in private industry working for the national defense. It prepares schemes for adapting supply to demand.

The labor inspector supervises all labor exchanges and employment bureaus,

public and private. He may for certain occupations or industries confer a monopoly of placing on public exchanges. In such a case a private agency cannot deal with those occupations, and employers must notify the labor inspector of all hirings and dismissals. He may prohibit hiring without his permission, and advertizing for help. Regulations also make it compulsory for private companies working in the interest of national defense to notify the public employment office of their labor requirements not less than eight days before hiring workers.

Provision is made for the compilation of a list, in each area, of workers in certain essential occupations, with information as to their addresses and qualifications.

Workers and Management May Be Requisitioned

Workers on this list may be requisitioned by the labor inspector, and told where to work. Individuals may be requisitioned, or there may be collective requisitioning. In fact, the management and entire staff of private establishments, factories, and undertakings engaged in work for the government, or having received notice of orders or subcontracts, or of manufacturing requirements from the government, may be requisitioned.

The requisition order indicates the nature of the employment or service required, probable duration, etc. Persons requisitioned are covered by labor and social legislation. They receive the same rate of pay as the job would normally carry in peace time.

This scheme is set up so that the labor inspector may allocate workers and facilities to the various public services and private industries, taking into account the relative importance of each for national defense.

France has taken over control of all public and private vocational training establishments, and is coordinating their activities. The labor department must keep the education department informed as to the number of skilled workers that will be required in different trades, and the time limit within which they should be trained. The labor department is responsible for supplying the vocational training centres with skilled instructors.

Source of Information

Various other problems have also been dealt with, by legislation and decree. In most countries the families of mobilized men receive an allowance in addition to the portion of their pay which soldiers send home. Most countries have regulations guaranteeing soldiers and sailors their old jobs when they are demobilized. Social security measures also provide for the continuance of rights while on active service.

The International Labor Office, of which Mr. John G. Winant, former Governor of New Hampshire, is the Director, is making a series of surveys of industrial relations problems created by the war. These are being published in the International Labor Review, under the title, "Social Legislation in Wartime." The information given above was obtained from this source.

What are the Social and Sociological Elements in the Lives of Workers, in Large and Small Communities that Influence Their Efficiency, Their Attitudes towards Their Employer, Industry in General, Unions and Their Political Beliefs?

Company *and* Community Relations

By Charles S. Slocombe
Personnel Research Federation.

A scientific study of labor relations must include a consideration of the environmental factors that influence them. To illustrate the likely nature of the findings from such a study, let us consider some of the effects on workers of life (1) on the country and (2) in the city.

The data which we shall quote are from sociological studies of the differences between rural and urban living. In these studies, rural life is defined as life in communities of 2500 population and less, and urban life as that in communities of over 2500.

City Dwellers Are Heterogeneous

Some of the differences between rural and urban life, of our workers, which are likely, directly or indirectly, to affect labor relations and create tensions, are the following:

Foreign born and their offspring are concentrated in cities, and the proportion of native white stock is much smaller than in the country. Thus the typical city does not consist of a homogeneous body of citizens, but of human beings with the most diverse cultural backgrounds, often speaking different languages, following a great variety of customs, habituated to different modes and standards of living, and varying from their fellow city-dwellers in tastes, beliefs and ideals.

The death rate in cities is higher than in rural areas. Though influenza, smallpox, malaria and dysentery deaths are lower in cities, they have higher rates for venereal disease, tuberculosis, alcoholism, drug addiction, general paralysis, in-

sanity, heart diseases and cancer. Health conditions in cities, as judged by death rates, are today only as good as they were in the country in 1900.

Many Go on Government Relief

THE percentage of the total population on government relief increases with the size of the city up to one million population. The stability of social organization generally is adversely affected by the mixture of people in cities. A mobile population of diverse elements does not develop habits of community responsibility, and concern about welfare needs, and more reliance is placed on governmental social services.

In the city, single life is more prevalent than in the country, families are smaller, and more frequently without children.

The birth rate in cities is so low that they grow and survive through constant migration from rural areas, where the birth rate is higher than is necessary for rural population maintenance.

Divorces and broken homes are more frequent in cities, though there are indications that unhappy marriages are frequent in small towns and in very large ones, the lowest separation rate being in towns of from 50 to 100 thousand population.

Suicide Rate Is High

THE suicide rate is 25 per cent higher in large cities than it is in smaller ones. It goes up as the city increases in size up to 500,000, but for cities larger than this the rate goes down again. In smaller cities under 10,000 population, and in rural areas, the rate is 50 per cent less than in bigger cities.

Crime rates are higher in cities. Urban places furnish three times as many prisoners for state and Federal penitentiaries in proportion to their population, as do rural areas.

Large cities are unfavorable to single family dwellings. Home ownership is rarer. Many more people live in rooming houses, hotels, and eat in restaurants.

Per capita attendance at motion picture theatres increases with size of community.

Urban recreation is distinguished from rural recreation by a greater degree of specialization and commercialization. Opportunities for informal recreation, especially where the cooperation of others is involved are restricted by the limited extent of intimate and personal social contacts. Per capita expenditures for commercial recreation increase directly with city size. Commercial recreational establishments tend generally to provide passive recreation.

The number, variety, and quality of recreational facilities increases with city size. On the other hand, the greatest number and the greatest variety of such facilities per 1000 population are found in medium sized cities. Utilization of these

facilities is also greater in the medium sized cities. And these cities have the highest ratio of park acreage to population.

Loyalties Are Fickle

THE big city man typically moves in, and is a transitory part of, a multitude of social groups and is not permanently attached to any one of them. His loyalties thus are more fickle. He is inclined to greater tolerance, which he sorely needs, in order to live among fellow citizens who are so different from himself in heritage, interests, belief, and character.

The above are some of the indices and symptoms of the difficulties and tensions under which workers, supervisors, and to a certain extent the members of management itself, live in large cities when not at work. How far and in what way do the difficulties of city living spill over into labor relations inside factories?

Why Workers May Seek Managerial Responsibility

TO BEGIN with, it would appear that much of the unrest of workers, and much of their desire to interfere in problems which are primarily the province of management may be due to a lack of adequate family outlets, and adequate group social outlets in city life. In other words, the absence of large families with their managing responsibility for the heads of families, the absence of active participation in clubs and societies with exercise of responsibility as office holder and committeeman, may account for the great tendency of workers to vent their desire for some kind of management at the place where they work.

The tendency of workers to seek to interfere in fields not properly their own was well shown in the attitude of an executive of the Steel Workers' Organizing Committee, who wrote in the Harvard Business Review:

"Almost any shop or mill is full of wasteful practices. There are many workers who could *offhand* give the management hints as to how it could save money and put out a better and cheaper product. It may take time to educate most employers to such a program."

This is an example of the curious fact that in an age of specialization in engineering and personnel management, unions of non-specialists are demanding the right to tell management how to run its business.

It may well be true that this tendency is in part due to lacks in the workers' outside life. If more workers had more practice in managing social and athletic groups, they would come to a better understanding of the intricacies and interrelationships of various factors in these groups. They, themselves, would be up against apparent inefficiencies and conflicts in their own groups, and would have experience through committees in eliminating them, and thus it would gradually dawn on them that the management in the place where they work was probably busy on its efficiency increasing problems in the same manner. Possibly through

these groups, they might have experience with outsiders trying to butt in and tell what to do. That indeed would give them experience in understanding management's attitude toward some of the insistent suggestions of non-specialists.

We have the curious anomaly that the worker the least able to understand the problems of managing is the one most vocal in demanding a share in management.

In speaking of this we do not disparage helpful suggestions and employee cooperation based on a well-balanced sincere desire to help in the progress of a company. We differentiate such a desirable cooperation of employees from cases in which, individually or through an organization, they seek to force their views on management.

Isolation of City Workers

A SECOND effect of modern urban life on labor relations may well result from the greater isolation and loneliness of workers in the large city. In the smaller community, a man and his family form part of a closely inter-related and matted felt of informal and formal social groups. This, while it has static aspects, that do not appeal to some younger persons, gives a stability of behavior that is not found in the larger cities.

The statements of propagandists in the smaller community are talked over, for evaluation purposes, with numerous people, both men and women, some of whom are fellow employees and others just fellow-townsmen. On the other hand, in the larger cities, the worker and his small family are much more isolated individuals. Apart from his contacts with a few fellow workers, a man to a large extent is compelled to form his own individual judgment upon matters placed before him for consideration. This situation is relative, of course, but it does suggest another reason why stability of labor relations may be more difficult to achieve in cities than in towns.

Desire to Change The Whole World

A THIRD consequence of city conditions might possibly be defined as the tendency of the city man, whether he be worker, professional man, small retailer, or what not, to join associations, with some grand, but rather vaguely defined purpose, designed to reform the world. By contrast, the small town resident is possibly more likely to associate himself with something more directly concerned with his immediate community interests.

Here, then, is another reason why the city worker may tend to join national or international labor unions, whose aims and objectives—if he really looked into them—might turn out to be of no importance whatever to him as an individual. On the other hand, in the smaller community, the group formed, whether affiliated with a national union or organized as an independent group, is more likely to limit its activities to matters directly affecting its local members.

The city man, however, may prove more fickle in his loyalty to groups to which he belongs. The rival demands on his attention of many interests perhaps account for this. And as the treasurer of any society well knows, it is very difficult to collect dues. We are witnessing exactly this phenomenon in some of the newly organized industrial unions. In so far as this tendency is characteristic of city dwellers, it seems to indicate that many of these unions will not grow into more than loosely organized groups. Is the union demand for the check-off and the closed shop a manifestation of this difficulty?

Wage Demands Generated

ANOTHER effect of city conditions is doubtless an increase in wage demands that may be due not to cost of living only, but to the necessity for engaging in commercial recreation. Demands for shorter working hours and a longer weekend may stem from desire to escape from the city, fully as much as from the factory.

Finally, tensions and frictions directly attributable to the sense of isolation and futility in city life may lead to quarrels among workers and foremen, to a thin-skinned sensitivity to slight and imagined insult, and to a lack of cooperative spirit among supervisory officials. Domestic difficulties, of the type leading to high divorce rates in cities, may well be among the important causes today of these deleterious tensions and frictions.

What Can Industry Do

WHAT can industry do about all this, even if it does learn from research specifically how these matters affect labor relations?

(1) One answer, of course, is to move into the country. During the past 10 or 15 years, there has been an increasing tendency for plants to be built in the smaller satellite communities that surround large cities. This has been done because of lower taxes, and lower costs, but it may well be suggested that the time has come when companies might look to social as well as economic factors in locating their plants, and in distributing their work. That is to say, when other factors of production, transportation, etc., are equal, new plants should be located in smaller communities, perhaps in those ranging from 50,000 to 150,000 inhabitants.

(2) In connection with this process of migration, care should be taken in drawing up labor policies and agreements, to allow for differences in character of city and town employees. Otherwise it is possible that artificial city tensions and rigidities may be introduced into the relations in smaller communities. For instance, an agreement drawn up and signed in Detroit, largely influenced by conditions there, contains provisions and introduces relationships that should be avoided in a community of 100,000 persons.

Detroit Edison Program

WHERE plants are located in cities, employees should be encouraged in forming social groups of their own. (3) In carrying this out, care should be taken to avoid any stigma that might attach to paternalistic welfare activities. If properly planned, the stimulation of these social activities is certainly evidence of a recognition by industry that man does not live by bread alone. An example of well-planned employee social groups is had in the Detroit Edison Company, an organization notable for its good employee relations. The groups include a boat club, bridge club, business club, camera club, chess and checker club, concert orchestra, athletic association, dramatic club, American Legion post, girls club, electrical club, glee club, linkage club, philatelic society, rifle and revolver club, safety committee, tennis club, and others.

(4) This whole matter involves, of course, the question of relationship of groups of company employees to other social groups in the community. This angle, of course, would require some investigation and working out.

(5) As part of its public relations policy it may be desirable for a company to foster the idea of a worker attaining a status, in the community and among his neighbors, because he works for the company. This would give him a natural feeling of belonging to something desirable, and would offset his feeling of isolated uselessness.

Bad Housing Accentuates Auto Industry's Difficulties

COMPANIES might realize to a greater extent the wide effects of their policies, and perhaps do more in the way of exercising remote influence. (6) A case in illustration is the situation in Detroit. One of the most disturbing elements in the private lives of workers there is the shortage of houses. It is said that at times workers must pay as much as 55 per cent of their wages in rent. Quarters available even then are often unsatisfactory. For instance, a skilled mechanic used to a single family house for his wife and children, finds himself in Detroit compelled to live in cramped quarters, possibly down to the point of taking a lodger. Such a condition does not make for satisfied or efficient workers, and breeds a demand for high wages not related to value of output.

It is said that the reason for the housing shortage is the fluctuating nature of the automobile business, leading to uncertainties about real estate values, and accompanying reluctance of investors to put money into new houses. Steps in advance, however, are the lengthening of production period by the automobile industry, and the recently announced policy of General Motors of advancing funds to workers during layoff periods. These two policies and perhaps others that might be introduced, after study, will unquestionably affect the housing situation in Detroit. This should relieve tensions and lessen demands for pay increases not

related to value of work performed and generally lead to improved labor relations in the automobile industry.

Industry Can Aid in Social Problems

We cite these facts as examples of the remote and encircling effect of company policies, and their effect on the life of the community and of employees. It is probable that much can be done by industry along these lines to aid in solution of social problems in cities.

(7) If capitalism is to continue, companies must learn to put their roots down in the communities in which their plants are located, so that they become really and truly integrated with the life of the country, instead of something distinct, at which it is fun for reformers to take pot shots.

How Can We Overcome The Handicap of Absentee Ownership?

It would seem particularly important for industries to get their roots down in the medium sized and satellite cities. It is likely that much of the industrial expansion of the future will be in these cities, since the very large communities may be approaching a population saturation point.

While these medium sized cities, as we have seen, present a situation in which tensions are less, and social living is more healthy and satisfactory, there is a potential menace in the fact that in the last decade or two, plants in this type of city, have come under the control of persons living some distance from them.

Traditionally, in the small community plants were owned and managed by residents. Today this is less so, there being what is called absentee management, a condition that is likely to increase.

There is evidence today that under this absentee control condition, insufficient attention is being given to the urgency of seeing that the plant has its roots in the community, and that it develops labor relationships that will bring the community to regard it as part of itself.

A recent survey, by the New England Council, of the relations of factories to community life shows very strikingly how this aspect has been neglected, and neglected very largely by resident managers who are not owners.

If the New England condition of affairs is typical of the country as a whole, it is not difficult to see how certain types of politicians have been listened to in their diatribes against industry and business; and how employees and citizens who should have been in close touch with, and who should have had a greater knowledge of industry's motives, have been left by industry to guess.

Preservation of Free Enterprise Involved

A plant stuck down in a community, which hires and fires, pays a fluctuating amount of wages, and has a managing personnel which follows policies not arising out of or related to the life of the workers and the community, may arouse

local antagonism. This antagonism is increased if the managing personnel adopts a patronizing attitude toward the locality, and looks to larger centers for friends and social contacts. Certainly local residents of the locality and employees will have little motivation for protecting such a plant, and its managers, against attacks.

Such a situation contrasts with that in which, either owing to a well developed system of absentee management, or to intelligent resident owner management, the plant has become the pride of the workers and community, which regards it as part of their life, and will defend it and preserve it.

The environmental problems outlined above are a vital part of the bread aspect of labor relations. Upon our success in meeting these problems in the next 25 years, may depend the extent to which people will refrain from thinking in terms of socialism or communism.

More and More Companies are Finding it Desirable to Consult Their Employees about Proposed Policies, Practices and Programs. There is Described Here the Excellent Experience of a Company which Applied this Consultative Method to Safety.

The Westinghouse Safety Inventory

By T. O. Armstrong, and H. B. Duffus

Westinghouse Elec. & Mfg. Company,
Springfield, Mass.

Every well conducted business requires that time be taken each year to "take stock" or inventory raw materials, work-in-progress, and completed apparatus. Payrolls and accounts are audited periodically. Individual examination or "stock taking" is being recommended more and more by health authorities. Why not inventory periodically your accident prevention work?

Do you want to know to what extent your employes are interested in your safety program?

Would they, if they had the opportunity to voice their opinion, take part in your safety program?

Are you willing to let them have a part in the safety program?

Are they tired of the very word safety?

Is your program (posters, meetings, etc.) just another one of those things?

Will your safety program stand such inquiry?

When you are doing all that you can, holding meetings, assemblies, keeping your posters up-to-date, running campaigns, having movies, and so on, what else can you do?

Employes Determine Safety Policies

Westinghouse at its East Springfield Works has found the answer to these and many more such questions. Their safety program has withstood the inquiry of the employes because the employes take an active part in setting the policy for the year's program in safety work.

Safety inventories were started at East Springfield in the year 1937, with what

was known as the "Clean Sweep for Safety" campaign. Since that time safety inventories have become standard practice, and are the bases for planning the year's safety activity.

Immediately upon "return to work" after the plant's regular inventory, "Safety Inventory Cards" are distributed to each employe from sweeper to manager, hourly paid and salaried worker, requesting each individual to "take stock" of his or her own situation with respect to safety.

In general the 1938 inventory questions were designed to check the knowledge of the employe as to the equipment that was surrounding him, and that he used every day to make his workday a safe one, while in the 1939 inventory questions were designed to create interest and develop a consciousness in the employe of the health side of our program, and the effect of lost time due to personal reasons beyond our control.

HEALTH & SAFETY INVENTORY

Please read the inventory instructions carefully before filling in this card

Dept. ..... Group ..... Occupation .....

1. Do you operate a machine? ..... Is it properly guarded? ..... Recommendations .....
2. What personal safety equipment do you use on your job? .....
3. What additional personal safety equipment do you require? .....
4. Do you wear safety shoes at work? ..... If not, why? .....
5. Have you completed a course in First Aid? ..... When? ..... With whom? .....
6. Would you be interested in attending First Aid classes this winter? .....
7. Would you be interested in attending classes in home, highway, and industrial safety this winter? .....
8. Did you use Salt Tablets this summer? ..... Please comment on them. .....
9. How much time did you lose this year because of sickness? ..... Home accidents? .....
   Automobile accidents? ..... Other accidents (explain) .....
10. When were you last examined by a doctor? ..... Do you want a physical examination? .....
11. Have you any additional recommendations for the advancement of safety and health among our employes? .....

SIGNED ..... NAME ..... DATE .....

USE OTHER SIDE FOR ADDITIONAL COMMENTS

Each year through this medium we are able to measure the employes' attitude toward our program, and best plan the year's program having his approval and cooperation. It is also interesting to note that no matter how good a safety program is or has been, there is always room for improvement. This is verified in the fact that each year many suggestions are received for improvement.

Employe Attitudes Checked

Two thousand and twenty-five cards were distributed upon return to work.

1625 distributed to hourly paid employes in the shop.
1544 were returned and completely filled out.
400 distributed among salaried and office workers.
360 were returned completely filled out.

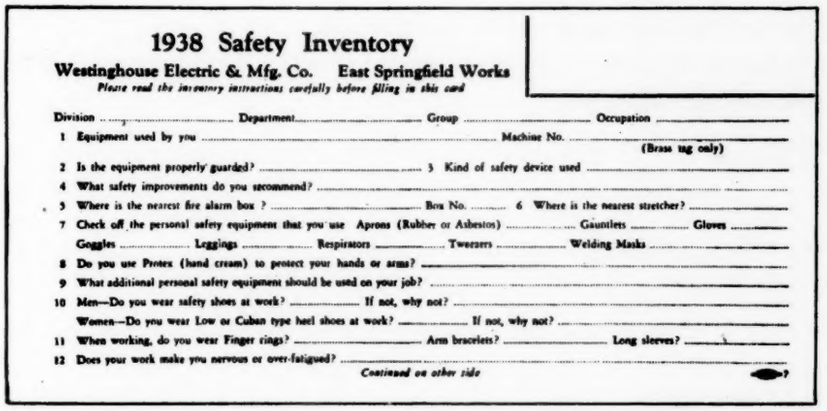
This latter group was particularly important. Members of the safety committee asked the question, "Why not distribute the cards to office and salaried work-

ers?" Everyone must feel and know that all are interested in the safety program, the office worker as well as the shop worker, and including the management.

Carefulness is as important in walking around the office, going up and down stairs, handling a ditto or mimeograph machine, as it is in handling a light punch press, lathe or driving an electric truck out in the plant.

In answer to the question, "Is your equipment properly guarded?" 1080 said yes. 26 said no.

In asking this question the safety committee wanted to know how the employe felt about it, believing that if he or she had an opportunity to express himself or herself freely, there was more likelihood that he or she would cooperate in its use safely and would appreciate the part equipment played in alleviating suffering and mishap.



1938 Safety Inventory

Westinghouse Electric & Mfg. Co. East Springfield Works

Please read the inventory instructions carefully before filling in this card

Division ..... Department ..... Group ..... Occupation .....

1 Equipment used by you ..... Machine No. ..... (Brass tag only)

2 Is the equipment properly guarded? ..... 3 Kind of safety device used .....

4 What safety improvements do you recommend? .....

5 Where is the nearest fire alarm box ? ..... Box No. ..... 6 Where is the nearest stretcher? .....

7 Check off the personal safety equipment that you use Aprons (Rubber or Asbestos) ..... Gauntlets ..... Gloves .....

Goggles ..... Leggings ..... Respirators ..... Tweezers ..... Welding Masks .....

8 Do you use Protex (hand cream) to protect your hands or arms? .....

9 What additional personal safety equipment should be used on your job? .....

10 Men—Do you wear safety shoes at work? ..... If not, why not? .....

Women—Do you wear Low or Cuban type heel shoes at work? ..... If not, why not? .....

11 When working, do you wear Finger rings? ..... Arm bracelets? ..... Long sleeves? .....

12 Does your work make you nervous or over-fatigued? .....

Continued on other side

In the twenty-six no's, the safety committee had an immediate job to do in the investigation following.

1080, however, expressed themselves favorably as being well satisfied that their particular equipment was properly guarded.

Kind of safety device used?

The intent of this question was to interest the employe in knowing the type of equipment used, as well as the why of its use.

Such statements recorded on the cards as: "Guards over belts to protect me; hand trips to protect my fingers; switch interlocks; and safety shields to protect my eyes."

What improvements do you recommend?

Ninety-six suggestions were received in answer to this question. Eighteen suggested a new type of Safety Equipment and seventy-eight for miscellaneous improvements, including better lighting facilities and better ventilation.

The next two questions were very interesting and probably caused considerable commotion throughout the plant—everyone was asking the other fellow where the nearest stretcher or fire alarm box was located. It clearly indicated to us how

little we know about those things around us which are commonplace, but which are so necessary when needed.

Where is the nearest fire alarm box? Where is the nearest stretcher?

The intent of these questions is to draw the attention of each employe to the location of each. We recommend these questions periodically to keep everyone posted as to the whereabouts of such equipment, as the Steamship Captain requires Fire Drill periodically to keep his crew and passengers alert in the event of an emergency.

What personal safety equipment do you use?

Too often equipment such as aprons, gloves, tweezers, etc., is issued out of stock without any thought on the part of the employe that they are issued to him and purchased for him by the company for his health and safety.

This question was designed to call attention of the employe to the extent in which we are interested in his welfare on the job.

The tabulation brought out the following facts about materials purchased for the protection of the employes:

170 Aprons	Fireproof duck for welders and solderers; rubber aprons for acid dippers and platers and any operations where there is dampness or wet processing
63 Pairs gauntlets	For welders and platers
587 Pairs gloves	Cotton or leather; palms for material handlers, laborers, hand winders and women operators in certain operations. Leather gloves for welders and rubber gloves for platers and acid dippers
391 Pairs goggles	All types for all operations where there is possibility of eye hazard—machine operators, grinders, welders, certain foundry operations, etc.
46 Pairs leggings	For certain foundry and plating operators
26 Respirators	For foundry shakeout crews, spray painters, and certain dust producing operators
66 Pairs tweezers	For punch press operators
31 Welding masks	For acetylene and atomic hydrogen welders

Do you use protex (hand cream) to protect your hands and arms?

Protex is furnished by the company on all occupations where the employe comes in contact with cutting compounds. It is a preventative against skin dermatitis. It is expensive, consequently it is used only where exposure is likely.

How extensively is it used and by whom?

254 employes stated that they were using it all the time, on such occupations as hand and automatic screw machines, certain lathe operations, wash tanks, painters, platers, acid dippers, etc.

What additional personal equipment should be furnished to safeguard you on your job?

111 suggestions were received as to additional personal safety equipment desired. Maintenance workers wanted more fuze pullers; others wanted more goggles,

gloves, safety feet for ladders, a hoist, fire extinguisher, a blower; and one suggestion to build a truck the same height as the presses for easier handling of dies into the press.

Do you wear safety shoes? If not, why not? Yes 215. No 763.

Answers to this question were varied, and indicated in many cases that a selling job was still to be done in this field. Many of the employes had had sad experiences sometime ago with safety shoes and as a result were reluctant to try again.

Others stated that safety shoes weren't needed on their jobs.

The intent of the following question was to point out to women that the wearing of high heels was hazardous. In answer to the question:

Do you wear low or cuban heels at work? 383 women asked. 198 said yes. 14 said no.

Likewise the following question was asked to point out that on certain occupations the wearing of finger rings, arm bracelets, and long sleeves was hazardous.

When working, do you wear finger rings, arm bracelets, long sleeves?

Such practice on operations of rotating machinery is particularly hazardous; drill presses, lathes, etc., where work rotates and there is the possibility of the ring or sleeve getting caught in the rotating work, resulting in some of the most serious accidents recorded by many firms.

Does your work make you nervous or over fatigued? 75 said yes. 7 said sometimes.

In our experience we have found that many of our accidents are due to nervousness or over fatigue. New help anxious to make good on the job; older employes transferred from one job to another and oftentimes a heavier or a faster one; the physical condition of the man himself; man placed on the wrong job—all are factors which should find the attention of a real, live, Safety Committee.

Are there any physical ill effects from your work? 84 said yes. 1538 said no.

All of the eighty-four gave reasons for their complaints—fumes, vapors, drafts, etc. and were investigated and corrected, even to the extent of calling in a chemist to analyze the jobs where complaints stated "fumes and vapors."

Does your job require you to stand? Sit? Walk around?

This question of course ties in with the one asked about fatigue and may have been the cause in many cases. All cases were investigated by the Safety Committee, as a part of the safety program for the year. A new design chair for women workers was the result of one investigation.

Do you know the company safety rules? 1409 said yes. 74 said no.

Needless to say the seventy-four No's soon found out. Each was called upon by a member of the Safety Committee and the rules explained, and a copy left with him.

Gratifying to the committee were the answers received to the question:

Do you believe that the safety rules should be enforced? 1950 said yes. 74 said no.

This would indicate that the average employe is still rather sensible about the welfare of himself and others around him. He will stand for no tomfoolary about

safety, and he doesn't hesitate to state so when given the opportunity to express himself.

Are the company safety rules for your benefit? The Company's? Or both? Yours, 1500. The company's, 100. Both, 1800.

This tabulation indicates that most employes felt that the company safety rules benefitted both the company and the employe and stated so in both places on the card.

What can be done to improve your working conditions with regard to your health and safety?

Here was an opportunity for all to suggest improvements if they so desired. Three hundred and eighty-one suggestions were received; suggestions for the elimi nation of drafts, better lighting, ventilation, new safety devices, etc.

The Safety Committee was anxious to get an expression of the feelings of the employes about First Aid Courses and whether they would take part in such courses if they were offered.

Have you ever completed a first aid course?

Two hundred and forty-three employes stated that they had completed a First Aid Course at some time or other. The major group of these who had completed such a course stated that they had gained such knowledge in the Boy Scouts of America; the next largest group was to the Army; others stated former employers, schools, colleges, Red Cross, etc.

Would you be interested in attending classes in first aid? 660 said yes.

Classes were formed immediately, but due to limitations of instructors it was necessary to limit the number of enrollments to one hundred and forty-five, who meet each week for a period of ten weeks, one hundred of them finally receiving diplomas at the annual meeting of the local Red Cross Chapter.

We are continuing these First Aid Classes again next year, believing it a good policy to have on hand and available throughout the works men and women capable and trained to do a good First Aid job when and if the emergency arises. The classes this year will be built up to cover a wider field. Standard First Aid Classes will be arranged for those who have had no First Aid training. Advanced First Aid Classes are scheduled for those who completed the standard course last year. In addition to this, arrangements have been made for some of those best qualified to attend an instructors' course so that we will have developed before this year is over a group of our own First Aid instructors, in this way making it possible for us to carry on from year to year a series of courses in First Aid instruction.

The following question also indicated an interest in all phases of Safety among the employes. In answer to the question:

Would you be interested in attending classes in home, highway, and industrial safety? 487 said yes.

In the 1939 Health and Safety Inventory many of the questions, as above, were

duplicated for comparison and to check the work of the Safety Committee. Most interesting in the comparison was the question with reference to the wearing of Safety Shoes, indicating definitely that the Committee had been on the job.

Do you wear safety shoes? In 1938, 215 said yes; in 1939, 335 said yes. Increase 120.

During the past summer Salt Tablets have been distributed quite extensively throughout the Works and the Safety Committee were interested in knowing the employe's reaction to them. In answer to the question:

Did you use salt tablets this summer? 750 said that they had.

Others commented on them, stating that they had not used them because they did not perspire very much and therefore didn't need them. Some said they had tried them, but had become nauseated, or that they had made them sick.

In an endeavor to interest the employe in the amount of lost time, losses in pay, and the amount of sickness due to the common cold and other personal ailments, other than industrial, the following question was asked:

How much time did you lose this year because of sickness? Home accidents? Automobile accidents? And others?

The following tabulation as the result of these questions is interesting:

CONDITION	NUMBER OF CASES	DAYS LOST
Common colds	152	372
Severe colds, including bronchitis, tonsillitis, grippe, intestinal grippe, pharyngitis and other irritations of the mucous membranes due to cold infection	77	776
Infections, including leg, ear, foot, jaw, sinus, eye, rectal abscess, boils, poison ivy, etc.	16	152
Personal (miscellaneous personal conditions)	22	55
Operations: Tonsillectomies, appendectomies, sinus, goiter, eye, fistula, etc.	16	438
Serious illnesses: diseases of the pulmonary track, cardiovascular system, nervous system, and renal organs	21	934
Totals as the result of sickness	304	2,727
Home accidents	19	222
Automobile accidents	9	71
Recreational accidents (softball and skiing)	3	35
Totals as a result of outside accidents	31	328
The full significance and the necessity for some action being taken to reduce the above causes of time lost can be visualized when compared with the following figures on cases and time lost because of industrial injuries within the plant:		
Totals as a result of plant accidents	5	145

What is the feeling of the employe toward periodic medical examinations? Do they want them? Would they avail themselves of the opportunity if they had the chance? To determine the answer to these questions, the following was asked:

When were you last examined by a doctor?

A study of the following tabulation is interesting. The majority of the ex-

aminations for 1939, 1938 and 1937 were those covering physical examinations by our doctor during re-employment.

Year of examination	Number examined
1939	815
1938	610
1937	240
1936	101
1935	56
1934	68
1933	33
1932	18
1931	20
Prior to 1931	87

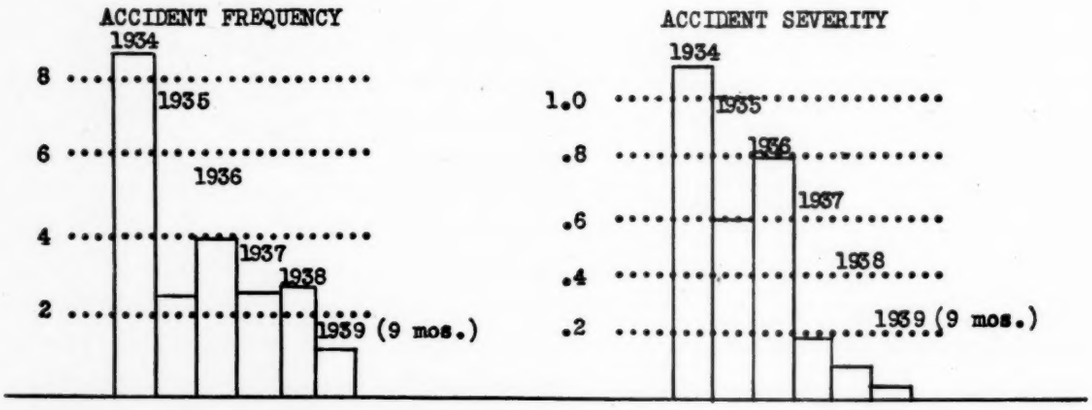
Do you want a physical examination?

372 said yes. A few stated that they now had periodic examinations by their family physician.

As a basis for planning your next year's programs the Safety Inventory is very worth while.

As a measure of the job done over the past year the Safety Inventory is excellent.

In the past we thought we were doing a good job; our records proved that we were, yet we found after our first inventory that there is always room for improvement.



We are gratified to know that in the main the employes not only were enthusiastic about presenting their point of view, but they believed in our safety program, they wanted it continued, and wanted it enforced.

The Decision on the Part of Management to Codify Existing Material Came Because the Local Union President Requested a Manual to Help the Men. He also Requested that Examinations for Transfer and Promotion be Considered.

How *to* Prepare *a* Job Manual

By Ralph D. Williams,
Hudson Valley Fuel Corporation,
Troy, N. Y.

From time to time the notion arises that anybody who can close a valve and record a gauge reading can be a shift operator in some of the departments of a gas plant. That this is a dangerous fallacy has been demonstrated many times in sudden, costly emergencies that were not handled promptly and correctly. Such emergencies always call for reexamination of safety rules to see if the condition could have been foreseen and raise the question as to whether the training of the men involved was adequate to prepare them for their jobs.

Not Every Man Can Do The Job

Careful investigation of a number of cases from the safety and training points of view has led to the conclusion that most of the cases were just ordinary operating situations which got out of hand not because the operator did not have the opportunity to know the proper practice but because he did not understand it. This may appear to be one of those facts which is self-evident but it has been surprising how many people, aside from the foremen and most of the operators who have direct responsibility for these process operations, still hold the opinion that almost any man given time and experience and a relatively small amount of training can become an operator.

What are the qualities that make a good shift operator in a plant? Why is it impossible for some highly skilled laborers to qualify for such jobs? Why are excellent mechanics often sadly out of their element when attempting to regulate a series of processes? Why do men who have done satisfactory work with material handling equipment, conveyors, crushers, etc., fail to perform satisfactorily when

handling gases and liquids in pipes and tanks? Certainly some of the many leading questions which occur and recur give some clue to the answers.

This is one of the problems which is part and parcel of operation of a plant. This paper outlines the effort made at one plant to solve this particular problem and sketches the history of the investigations.

Tests Might Be Used

THE idea of developing tests for specific abilities is not new. Examination material is in use for determining various abilities such as mechanical, technical, clerical, etc., and many aptitudes related to manufacturing and business. Progressive examinations, written or oral, have long been used for demonstrating craftsmanship in selection and promotion of civil service and railroad employees. Over a period of time it became apparent that similar formal procedures could probably be developed for selecting shift men on operating processes as well as other workers in a modern gas plant.

The plant referred to in this paper is comprised mainly of two batteries of coke ovens, four 12-foot gas sets, and two gas producers; also the necessary by-product recovery plants, railroad facilities, and a butane vaporizing plant. The base gas load is produced in the coke ovens, the other facilities being used for underfiring the ovens and peak load requirements. The work done in such a plant falls into rather definite categories.

Plant Work

A. Operation of Solid Material Handling Equipment
   a. Coke Oven Machinery
   b. Coal and Coke Preparation Equipment
   c. Locomotive Crane and Railroad Switching
B. Operation of Technical Processes
   a. Coke Oven Heating (under-firing)
   b. Water Gas and Producer Operation
   c. Steam Raising (Stationary Boiler Operation)
   d. Recovery and Refining of By-Products (Benzol, Tar, Sulphur, Ammonia, etc.)
   e. Electric Supply
C. Repair and Maintenance
   a. Electricians and Instrument Men
   b. Millwrights, Machinists, Pipe Fitters
   c. Welders, Blacksmiths
   d. Oven Patchers and Brick Masons
D. Manual Labor
   a. Yard Labor, Trackmen, Clean-up Men
   b. Water Gas Fire Crew
   c. Car Unloaders, etc.
E. All Other
   a. Supervisors, Foremen, Engineers, Chemists
   b. Clerks, Accountants, Storekeepers

Such a classification gave clear indication that there really was a gap in our knowledge of the men in Group B with the apparent exception of boiler operating men. It was surprising to realize that with so much knowledge of the technology available the more fundamental knowledge of what personal abilities and aptitudes make satisfactory operators had not received the attention it deserved.

The departments which were chosen for study involved 62 men as follows: 15 heating (coke ovens), 10 boiler plant, 16 by-product recovery plant (tar, ammonium sulphate, and sulphur), 5 benzol recovery plant, 8 water gas plant, and 8 producer gas plant. It was believed that if these jobs were studied and analyses were made comparing the jobs, sufficient groundwork of data could be acquired to determine what the various jobs had in common, and wherein they were different. These studies were made by an outside organization. The studies underlying two of the jobs are described later therein, namely, water gas maker and his helper.

Job Duties Checked With Workers

Four men are regularly employed in each of the jobs described, and it is customary to have one or more men trained and ready to fill any job on short notice. Each operator described his duties and the duties of his helper to the job study man while on active shift duty. The job study man stayed through at least two shifts with each operator and his helper or until he was fully familiar with the duties, related working conditions and type of men who were doing the work.

By learning the jobs and related conditions in this way it was unnecessary for the job study man to be a selfconscious observer or to take notes. The job study man thus learned the job and wrote it up afterwards. The list of job duties so acquired was typed, and after being reviewed by the supervisor in charge of the department, was then again reviewed by each operator in turn. An office was provided where the job study man and the operator could sit down and review the lists of duties. One typed list was made of the job duties for operators and another such list for their helpers.

Union Requests The Study

In the background leading up to the decision to make these job studies was a plan to develop a manual of safety rules and operating information for each of the jobs in the plant above yard laborer. The decision on the part of the management to codify existing material came at the request of the local union whose president stated his belief that such a manual would be very helpful to the men. He also requested that the matter of formal examinations for transfer and promotion be considered.

This subject was studied extensively by the joint committee of men and management, a tentative plan was formulated, and the development of the manual begun. This committee followed the work from the start and did an excellent job in formu-

lating details of procedure for giving the examinations. Union officials and this committee did a fine teaching job in helping individual employees to understand the merits of the new method. The program would not have been successful without the enthusiastic support of the management, whose cooperation, from the outset, lent impetus to the prosecution of the studies.

The safety rules were revised and reprinted on loose leaf sheets. Foremen and operators cooperated in accumulating the most important operating information for the technical process departments. The revision of safety rules and editing of operating information was done by the plant safety engineer whose experience as an operating foreman dated back to the construction of the plant. The operating information was transformed to question and answer form and both questions and answers also printed on loose leaf pages.

Manual of Job Duties Prepared

As the work progressed it became apparent that the Manual was adequate for training of men in the departments in necessary knowledge, but did not furnish a satisfactory means of examining men for transfer into these departments.

As the job studies were completed, it became apparent that the duties outlined in the analysis of each job were excellent checks on the completeness of both safety rules and operating information. It was therefore decided to include lists of job duties in the manual.

Sufficient job data had been collected to prepare a qualifying examination to determine whether men had the ability to become process operators. Selection of helpers able to learn operating and make progress so as to qualify as future operators is a fundamental necessity. While the examination paper itself is kept confidential for obvious reasons it is designed to indicate abilities such as reading instructions, noting operating changes, writing reports, and making log sheet entries, arithmetic facility, practical judgment, following directions, general knowledge of the plant, interest in different kinds of work, knowledge of tools, etc.

Examinations for Promotion and Transfer

It is a practical type of examination weighted with plant atmosphere and common sense. It is the kind of examination with no time factor and does not depend on type of schooling. It was criticized by many operators before it was finally printed. This examination promised to make much simpler the selection of men for transfer to the foregoing departments.

In addition to the foregoing examination men holding helper and lower ranking jobs in a department who wished to qualify as operators can be examined on the manual by means of written or oral examination. (The job analysis had, therefore, furnished a sound base for a program for the selection and training of plant operators.)

In brief outline, the steps toward selecting competent men to fill vacancies in these operating jobs are as follows: First, compiling a list of men who, by formal bidding or verbal request, had applied for vacancies, present or future. Second, giving the qualifying examination. This must be passed with a certain percentage mark. Other factors always considered are physical condition, attendance record, safety record, performance record, length of service, etc. The final decision on the man selected is made by the management and reviewed with the joint committee.

The procedure is similar whether a transfer into a department or promotion within a department is under consideration. The final examination only is varied; with transfer into a department the man takes the qualifying examination described above, for promotion in a department the examination material is taken from the Manual.

Consulting Agency Aided

IT SHOULD be recognized that this material might serve as a pattern or guide for another gas company, but another gas company would need to develop its own specific material. Each group of employees and each plant layout, while similar in many respects, is so individual in character that serious difficulties would be encountered if a perfunctory adaptation of the material were attempted.

Our experience indicated the wisdom of having job analyses made by competent outsiders working with the regular operators. Without the time and help given by the twenty-four regular operators in the six departments this work could not have been done in its present form.

The benefits derived from the foregoing may be summarized in order of relative importance somewhat as follows: 1. inspiring confidence, 2. stimulating interest, 3. providing job and safety information, 4. supplying examination material, 5. providing a test of the accuracy of the employee manual, 6. producing a better understanding of the coordinated operation of the whole plant, 7. enhancing the appreciation of the importance of the individual in his job, 8. describing the qualifications of the man necessary for the job, 9. exchanging ideas relative to the job, 10. broadening the education of the supervisors, 11. recording departmental vocabulary and vernacular, and 12. furnishing a sound base for a program for the selection and training of plant operators.

The following abridged job analysis for water gas makers and helpers is typical for the six departments studied. This example is presented with this paper because it is believed to have wider interest in the industry than any of the others.

Summary of Analysis of Water Gas Maker's Job

1. General Description

(Based on Activities and Products Made)

General Description of Duties: Produces blue gas. Supply coke or coal to generators and pass air and steam through coke to make water gas to heat coke ovens where oven gas and coke are produced and also to mix with oven gas for city use.

Production of Coke. Supplies coke or anthracite coal to water gas generator; admits steam and air to make gas and pumps gas to heat Foundation ovens for making coke.

Production of City Gas. Pumps gas to holder to mix with oven gas in order to produce required quality and quantity of gas for consumers.

Summary of Duties

Examples

Charge Generator. Turn screw lock and open lid of generator—push lid away (on rails)—pull on larry car by hand to roll over hole, pull gear check loose with fingers, move larry back and forth over hole by hand crank (handle on wheel) and turn wheel, on side, to close bottom. Roll larry away and roll lid (above) over hole. Screw lid on tight by hand.

Start Automatic Operation. Pull lever out on control board to start air blast. Look through peep sight until color of fire shows cherry red. Push levers on control board to admit steam after set has been shut down for any time. Push small handle on side to "split-run" position after first "up-run."

Charge Relief Unit. Look at fire in relief generator and charge as necessary.

Inspect Seal Pot. Turn valves on seal pot at rear of boilers, wait for liquor to drain, insert short rod to determine sludge level, close valve.

Inform Foreman. Report unusual conditions to foreman.

Record Operation. Record major operations in log book to provide written record.

Inspect Water Level. Look at level of water in water column on boiler.

Supervise Fire Cleaning. Look over generator carefully after cleaning by fire crew and pass or reject job depending upon amount of clinker left.

Physical Characteristics or Factors of Operator

Examples

Physical Alertness. Walk to various positions on one level (operating floor) and maintain constant alertness during entire shift.

Physical Strength. Handle larry car, move lid and assist fire crew. Handle simple levers and valves, some strength required.

Physical Endurance. Work entire shift of operations listed. Some (infrequent) climbing of stairs or ladders required, work in standing or walking position with some rest periods.

Physical Health. Freedom from:

1. Impairment of vision or hearing
2. Impairment of legs
3. Heart disease

Experience

Examples

Minimum Experience. Helper—one year. Prior to Employment in Plant: General experience as steam engineer or fireman on railroad, in power plant and similar jobs.

(Minimum) Learning Period to Perform Duties Without Direct Supervision on Job. Working with experienced Water Gas Maker.

Relation to Other Jobs. Promotion to general foreman. Rotation to producer gas operator, heater. Promotion from turbine operator.

Abilities

Examples

Eyesight. Read ½″ numbers on gauges at 3′. Read approximate position of 12″ hand on 14″ face at 75′. Read 15″ clock at 50′. Distinguish between light blue, cherry red and purple.

Touch. Discriminate by touch and feel for change of 50° Fahrenheit on metal casing.

Accurate Movements. Use wrench to connect pipe.

Figuring (Arithmetic). Differentiate numbers 1–100. Weight relation—pounds and tons. Read multiple record chart in temperature and pressure units. Add, subtract 4 digits.

Oral Memory. Repeat meaning six simple sentences after one hour span (context).

Visual Memory. Read six gauges and repeat reading without error after 5 minutes.

Observation. Notice brick (6″ x 2″) 2 inches out of line at 10 ft. distance.

Multiple Operation. Watch gauge and turn valve simultaneously. React to auditory signal (bell) while working on job. Watch movements of levers at distance of 50 ft. and position of indicator on gauge.

Hearing. Distinguish difference in pitch of turbine. Notice when usual starting noise of turbine fails to occur every 3 minutes.

Understanding Instructions. (1) Oral—Give and understand simple verbal orders. (2) Write and read simple description as contained in log book and manual of instructions.

Work Situation

Examples

Place. Inside water gas building on second floor.

Materials. Coke and coal stored in bins and supplied to generators by manually controlled larry car. Handled almost entirely by helper.

Exposure to Weather. Entire shift spent on operating floor of water gas building with complete protection from weather.

Moisture. Water in small amounts on ground floor.

Temperature. Very hot in summer.

SAFETY PRECAUTIONS

Precautions with Regard to Hazards

I. Process. Possibility of explosion at start of operation due to having down run or back run instead of up run or failure to purge.

II. Personal. Gas or combustion burns: Possible injury from back draft while removing lid from generator if not careful. Falling objects: Possible injury from falling coke.

The Psychological Corporation of New York aided in the development of this work.

The Greatest Number and Variety of Recreation Facilities, per 1,000 Population are Found in Medium Sized Cities. Utilization of these Facilities is also Greater, and they have the Highest Ratio of Park Acreage to Population.

Workers *at* Play

Summary of Discussion,
At 24th National Recreation Congress.

THE part that industry can take in aiding in the provision of recreation for workers was recently discussed at the annual meeting of the National Recreation Association.

Two sessions were held, participants in the first being, M. M. Olander, Owens Illinois Glass Company, Toledo, O.; Frank P. Callahan, General Electric Company, Schenectady, N. Y.; Jack Reitz, R.R. Y.M.C.A., Boston, Mass.; James F. Walsh, Chrysler Corporation, Detroit, Mich.; and T. O. Armstrong, Westinghouse Elec. and Mfg. Co., Springfield, Mass.

Participants in the second session were: Guy L. Shipps, Dow Chemical Company, Midland, Mich.; E. S. Connor, Goodyear Tire and Rubber Company, Akron, O.; R. B. Tefferteller, Amalgamated Clothing Workers of America, Pittsburgh, Pa.; and T. O. Armstrong.

Philosophy of Recreation

IN THE first session under the direction of Mr. Olander we discussed the philosphy or the "Why" of recreation; that is, what is back of a recreation program for workers.

It was generally agreed that it must be and is good business to have an active interest in a recreational program for workers.

It was generally agreed that morale and business went hand in hand, and, that recreational programs did help in morale building. Several in the group offered evidence of increased efficiency on the part of workers as a result.

It was further developed that a company having recreational activities and facilities attracted better citizens to its place of business, that workers generally were proud of their company, and stated so publicly through the various recreational activities.

Paternalism Must Be Avoided

A FEW fundamentals were discussed in particular—one that top management must be such as to recognize its effect as a part of good business; that we must think in terms of the long range program, and not one spontaneously set up to meet some particular situation which presents itself. It must not be paternalistic. It must be a program that the employe wants.

The company or its representative must not be meddlesome in the recreation affairs. They should recognize it, help it, and probably would have to provide the spark to set it in motion, but the program in order to continue successfully must continue on its own momentum with the employes carrying it on because they get a "kick" out of it, and want it.

A recreational program, if well rounded out, does create a better fellowship among groups. It tends to enrich the life and personalities of the individual toward better citizenship, and a happier personnel.

To round out or broaden a program it must go beyond the physical, to the educational and the cultural. It is definitely a part of the human engineering program, as is personnel in all its phases. As the representative from Goodyear stated, "Our policy is to reach the entire personnel within the organization."

Almost unanimous were the group in the thought that a well rounded recreational program assisted in developing leadership within the organization. Many cited cases of new leadership found which had not been known before.

Give the employee an opportunity to express himself, help and assist by having a top management recognition of its worth, have a man within the organization to help to provide the spark, but be on the lookout for the expert who insists upon his ideas being carried out and becoming meddlesome, and defeating the purpose behind your program.

Should Recreation Be Left to Unions?

SOME thought that management had lost its interest in doing anything in the recreational field, that unions were taking over these matters, resulting definitely in a lack of interest on the part of the management.

Representatives of the General Electric Company at Lynn, Mass. and the Westinghouse Company at Springfield, Mass., both of which have large labor unions, brought out the fact that recreational programs conducted in their plants had gone on unchanged over the years, and that representatives of the Union had and were taking active part as members of the Recreational Associations along with

others on the Management side. Thinking on this matter was divided however, particularly due, to varied background, and experiences under certain conditions and in certain areas.

One of the conferees raised the question about the National Labor Relations Board decisions which have affected management's interest in recreational matters among the workers, citing a case where his company was forced to cease activity of a recreational nature.

Effect of Long Weekend

THE effect of the long weekend was touched upon—some questioned as to whether or not efficiency dropped off on Friday afternoon, (employes anxious to get away) and again on Monday morning, (employes slow in getting started); however, in contrast to these thoughts we had the statement of a man of more than twenty years experience who stated that, "The blue Monday has gone forever, efficiency is up, the workers better and more efficient as the result of more recreation." Probably there is such a thing as too much recreation, resulting in a desire to return to work, to get back on the job.

A definite need was expressed among the group for the broadening of college courses, training men for the jobs of recreation within industry, as is done with Physical training personnel in the Schools, YMCA, and other social agencies.

All of these throughts laid the foundation for the second session directed by Mr. Shipps of the Dow Chemical Company. Here we discussed the "What" of the program, the activity, the technique, problems, etc.

How Programs Financed

HOW are programs financed? Methods are varied, one company reporting that activities were sponsored as a result of membership sales to the employes at so much per year, while another stated that his company allocated so much money, budgeting it for various activities, loans to the Association to be returned from membership dues, receipts from shows and activities, etc. Another advised that all receipts came from the sale of candy, cigarettes and other articles in vending machines distributed throughout the plant.

Who paid the recreational director? In most cases the Company. Some had no director, as such, but guided the activity through some member of the Personnel Department. One company advised that the Recreational Association had its own Director fully paid by the Association itself.

In discussion, many members of the group felt that the employes should pay a part of the expense incidental to the program, as such practice tended to keep up the interest in the activities. As one member of the group stated: "If you can get the employes to pay dues into an Association you've got something; they will be interested and will take part in its activities."

Much discussion was held on the subject of what was being done in the small plants within the small communities who have very little facilities, individually, for recreational programs. Mr. Johnson of the Boston AAU offered the suggestion of a closer coordination of those interested with the social agencies of the community, for an allround program for the benefit of the worker, the management, and the Community.

Cooperative Plans for Small Companies

THERE was some question as to the expense of the various social agencies and the impossibility of workers being able to pay the fees charged. However a few instances of collaboration were mentioned such as the Newark Recreational Association, and the Springfield (Mass.) Industrial Association which were doing a fine job of coordinating the activities of the small plants within the community in recreational and educational programs. Another experience came from Joliet, Illinois, in what is known as a "Training Institute Program" for Personnel Men who meet each week for discussion and to plan recreational programs of workers within the plants and within the community.

Miss Rogers, YWCA, suggested that their organization was inexpensive and should be called upon for leadership material in the field of women recreational problems quote; "Our job is to train girls for leadership in Industry, to graduate them into organization work among the industrial women within the community.

New York City Programs

A GREAT deal of discussion was held on the Union and the recreational program. Mr. Boyer of New York told about the recreational activities in the City of New York, stating that the Unions recognized the lack of recreational activities for certain age groups within the city, and among the settlement workers.

In the past three years unions have taken a definite interest in Recreation—more than two hundred unions have formed into what is known as the Trade Union Athletic Association or League. Members are composed of those from the A. F. of L. and the C. I. O. The programs are administered by the Unions.

Mr. Boyer felt that Management has taken advantage of the recreational activity in the past, and that the Unions have always been and will be interested in the education of its members. Their program is divided into two groupings: the Cultural and Educational, and the Recreational Program.

The work and program is financed from the dues that the members pay. A short while ago 370,000 members presented a problem in the City of New York because of the lack of facilities—ball diamonds, and the like—members complained that there was no place to play. After contact with the Park Department, facilities were provided, and a building known as the Labor Sports Center. Every

member has the opportunity to purchase a season ticket to use—the center is open for his use—four nights each week for any activity he cares to take part in.

Mr. Tefferteller, of the Department of Cultural Activities, Amalgamated Clothing Workers of America, Pittsburgh, Penna. stated, "We have got to improve this sore spot in Industry today—if we are to continue the 'American Way' in contrast with the confusion in rest of the world.

With leisure time we must give the employe a fuller life.

It is our job whether it be a community of five hundred people or a large city to see what we can do to help those less fortunate to get that fuller life."

All Must Get Together

From his experience in Pennsylvania townships he advised that there was a crying need for recreational activity directed properly, choral groups, bands, orchestra, hiking, ball, etc. But it takes capital—the Unions can't supply it—the communities are poor—and the industries find it hard to take part financially. However, something could be done if all got together to plan and work out a program at little cost to all.

Unions today are trying to find ways and means to enrich the lives of its members in a fuller life.

Discussion continued on the questions brought up by these gentlemen. Some in the group questioned the reason for New York City having Union controlled recreational activity, feeling that in recreation there should be no difference between Union Members, Engineers, Clerks, etc.

The conference finally shifted to the need for collaboration of all interested parties about recreational matters, such as this conference of the National Recreation Association presented.

What To Do

Train workers in recreational work for industry.

Collaboration with Schools and colleges on training—use of available facilities, etc.

Build in the schools a philosophy of recreation.

Get together with members of your Park Commission, your School Board, your Recreational Men already in Industry, your Social Agencies, and your Union people if they have recreational men within their organization.

There is no reason why Labor, Management and those who have to do with and administer recreation within a municipality can't get together if they want to. The result is for the good of all.

It was recommended by this conference group that the National Recreation Association undertake a study through Committee of what and how this work is now being done in the various Communities.

It was also recommended by this group that the National Recreation Association consider the placement of this subject on next years program for two full days. Much was realized out of this meeting, but the surface was merely scratched.

Let us keep our eyes to the future—the worker of today is more educated than he was in yesteryear. Leisure time can be profitable to him if guided. He needs help and guidance.

The National Recreation Association

Some idea of the tremendous part which recreation plays in the lives of workers and their families may be gathered from the table below, which is taken from the Year book of the National Recreation Association.

130 Million Americans Play 300 Million Times

FACILITIES	NUMBER	PARTICIPATION PER SEASON
Archery Ranges	380	193,353
Athletic Fields	904	3,998,728
Baseball Diamonds	3,902	11,539,458
Bathing Beaches	564	173,446,706
Bowling Greens	201	139,652
Camps—Day	173	198,556
Camps—Others	105	260,327
Golf Courses (9-hole)	136	2,264,213
Golf Courses (18-hole)	218	5,817,487
Handball Courts	1,806	4,724,572
Horseshoe Courts	9,289	4,558,860
Ice Skating Areas	2,643	13,202,313
Picnic Areas	2,877	12,869,523
Shuffleboard Courts	1,881	2,219,044
Ski Jumps	114	38,244
Softball Diamonds	8,833	20,208,089
Stadiums	241	1,941,920
Swimming Pools (indoor)	324	3,571,331
Swimming Pools (outdoor)	838	26,249,891
Tennis Courts	11,310	10,798,311
Toboggan Slides	281	696,701
Wading Pools	1,516	
Total		298,937,279

Those interested in this matter are recommended to obtain a copy of this year book. (Price 50¢. Obtainable from the Association, 315 Fourth Avenue, New York, N. Y.) It gives an account of increases and decreases in types of recreation favored. It also gives information as to the recreation facilities in nearly nine hundred cities, together with the name of the person in each city who may be approached as a source of information.

The Association has a director of industrial recreation, Mr. E. C. Worman, who will be glad to give further information.

Book Reviews

PSYCHOLOGY FOR BUSINESS AND INDUSTRY

By Herbert Moore. New York: McGraw-Hill Book Company, 1939. Price $4.00
Reviewed by Edward N. Hay

"Psychology for Business and Industry" was evidently written as a college text-book, and as such has merit in spite of certain weaknesses in handling the very wide range of difficult material. The author places the proper emphasis on the importance of having the right man in the right place. He begins with the statement of "Psychology's service to business and industry" and follows up with successive chapters on getting the job, proper selection, hiring, testing, promoting, training, and concluding with chapters on accidents, fatigue, and the psychological problems in advertising and selling.

A weakness of the book is that it attempts to cover a great deal of ground; probably more than any one individual is competent to do. The result gives the impression at times of an assembly of material culled from other sources, and this effect is heightened by the enormous number of references, many of which are quite old. The results must be confusing to the general reader or the student, especially as the author does not attempt in many cases to indicate what method has proven its value in industry through long use, and which one is essentially experimental. This lack of discrimination greatly reduces the value of the book.

The chapters relating to testing the applicant and constructing tests ought to be the best, but are very disappointing both in the material presented and in the lack of critical interpretation. Too much space is given to tests which are not used in industry, and to others which have long since been discarded, such as Katherine Blackford's method of "character analysis".

The book will have little value to anyone of much experience in industrial psychology, and will be an uncertain guide to those without that experience.

THE FUNCTIONS OF THE EXECUTIVE

By Chester I. Barnard. Cambridge, Mass.: Harvard University Press, 1939
Reviewed by Sidney Adams

An analysis of the work of the executive by a practical administrator versed in philosophy, psychology and sociology. The first chapters of the book are given over to stating viewpoint and defining terms. The writer believes that formal organization, (in which the executive functions) has been neglected in current writings; at the same time he recognizes that informal organization is found within, and is necessary to, formal groups to a considerable extent. Formal organization is necessary to provide a system of communication within the group.

Simplicity of organization makes for better and quicker intra-communication. The basis for authority is its acceptance by those controlled; it is not something

inherent in those who control. Failure to realize this is one cause of executive failure. Another cause is the inability to reconcile conflicting codes of conduct—not so much from moral weakness, as from lack of capacity. The characteristics of the good executive are described in these words:

"Following loyalty, responsibility, and capacity to be dominated by organization personality, come the more specific personal abilities. They are roughly divided into two classes: relatively general abilities, involving general alertness, comprehensiveness of interest, flexibility, faculty of adjustment, poise, courage etc.; and specialized abilities based on particular aptitudes and acquired techniques."

Although the author's approach is somewhat abstract, the book is interesting and is well worth reading, because of the writer's fresh views on the subject.

CUMULATIVE INDEX

May, 1939

Theory and Practice of Temperament Testing ..... *Mary Elizabeth Hemsath*
New Ideas in Eye Testing ..... *C. E. Ferree and G. Rand*
Labor Board Director's Views ..... *J. Towne Nylander*
Merit System Research. I ..... *Max Freyd*
Aid for Job Seekers ..... *Caryl Pfanstiehl and Elizabeth A. McAlpin*

June, 1939

Industry Wide Union Agreements ..... *Alexander R. Heron*
Hiring for Better Labor Relations ..... *Guy W. Wadsworth, Jr.*
Merit System Research II ..... *Max Freyd*
Labor Policies of Y. M. C. A. ..... *Personnel Service Committee*
Personnel Practices of Sears, Roebuck & Co. ..... *Paul A. Mertz*

September, 1939

Labor's Point of View ..... *Clinton S. Golden*
Collective Bargaining Case Studies ..... *Charles S. Slocombe*
I. Strike Threatened Relations
II. Good Technique in Negotiating
III. Background of Relations Difficult
IV. How Bad Relations Were Improved
V. How Amicable Relations Deteriorated
VI. Planned Group Relations
Seniority Plans ..... *R. Douglas Dauterich*

October, 1939

War Effects on Labor Relations ..... *Charles S. Slocombe*
New Methods of Interview Hiring ..... *Samuel H. Ordway, Jr. and James C. O'Brien*
Right Relations Increase Efficiency ..... *R. H. Shainwald*
Planning for Fair Salaries and Wages ..... *Edward N. Hay*
Federal Policies on Employee Relations ..... *John J. Corson and Ilse M. Smith*

November, 1939

Million Dollar Research ..... *Charles S. Slocombe*
Industrial Uses for Applied Psychology ..... *Cecil E. Goode and Otis C. Trimble*
The Seniority Curse ..... *Fred W. Cottrell*
Hiring Telephone Mer by Tests ..... *Nathaniel E. Rossett and Peter Arakelian*
Personnel Research Federation ..... *The Director*